



**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
(PCT Article 36 and Rule 70)

23 DEC 2004

|   |  |  |
|---|--|--|
| Applicant's or agent's file reference<br>11050P4 WO/CMB                                       | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) |  |
| International application No.<br>PCT/GB 03/02795  | International filing date (day/month/year)<br>30.06.2003   | Priority date (day/month/year)<br>28.06.2002 |
| International Patent Classification (IPC) or both national classification and IPC<br>C11D3/00 |  |  |
| Applicant<br>RECKITT BENCKISER N.V. et al   |  |  |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.  
  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
 These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:
  - I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

|   |   |
|---|---|
| Date of submission of the demand<br><br>27.01.2004  | Date of completion of this report<br><br>18.10.2004   |
| Name and mailing address of the international preliminary examining authority:<br><br> European Patent Office - P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk - Pays Bas<br>Tel. +31 70 340 - 2040 Tx: 31 651 epo nl<br>Fax: +31 70 340 - 3016 | Authorized Officer<br><br>Saunders, T<br><br>Telephone No. +31 70 340-4480<br><br> |

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/02795**

**I. Basis of the report**

1. With regard to the elements of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-20 as originally filed

**Claims, Numbers**

1-27 received on 12.06.2004 with letter of 10.06.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/02795**

---

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

|                               |             |      |
|-------------------------------|-------------|------|
| Novelty (N)                   | Yes: Claims | 1-27 |
|                               | No: Claims  |      |
| Inventive step (IS)           | Yes: Claims | 1-27 |
|                               | No: Claims  |      |
| Industrial applicability (IA) | Yes: Claims | 1-27 |
|                               | No: Claims  |      |

**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/GB 03/02795

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following documents :

D1: WO-A-0129167

D2: GB-A-2140819

2. Novelty (Article 33(2) PCT)

2.1 D1, considered to be the closest prior art, discloses (cf. Formula C) a laundry detergent composition from which the subject-matter of claim 1 differs in that boron is not present.

3. Inventive Step (Article 33(3) PCT)

3.1 The problem to be solved by the present invention can be regarded as the need to provide enzyme-containing aqueous detergent compositions with improved stability without the use of boron compounds as stabilisers for environmental reasons.

3.2 D1 is concerned with improving the stability of aqueous enzyme-containing aqueous detergent compositions, however, boron compounds are required as stabilisers.

3.3 D2 is also concerned with improving the stability of aqueous enzyme-containing aqueous detergent compositions, yet although boron compounds are not necessarily present (cf. Example 3A), no water-soluble ionic salt is present either.

3.4 It would therefore not be obvious to a person skilled in the art to combine the teachings of D1 with the teachings of D2 in order to arrive at the solution to the above problem described in claim 1 of the present application and the subject-matter of claim 1 is therefore inventive.

3.5 Independent claim 27 concerns a method utilising the detergent compositions according to claim 1 and as such the subject-matter of claim 27 is also to be considered as being novel and inventive.

**BEST AVAILABLE COPY****CLAIMS**

1. An aqueous boron-free detergent composition comprising an enzyme, a stabilising amount of an organic water-miscible solvent, wherein the composition comprises between 5 to 60% of water with at least 70% of the remainder of the composition comprising a water soluble ionic salt.
2. A composition according to claim 1, wherein the enzyme is at least partially encapsulated within water-soluble particles in a gel, the particles comprising a water-soluble encapsulating agent, wherein the particles have a migration speed in the gel of less than one centimetre per month.
3. A composition according to claim 1 or 2, wherein the migration speed of the particles is less than 0.7 cm per month.
4. A composition according to claim 2 or 3, wherein the migration speed of the particles is less than 0.4 cm per month.
5. A composition according to any one of claims 1 to 4, wherein the composition has a viscosity greater than 4,000 mPas, more preferably greater than 6,000 mPas and most preferably greater than 10,000 mPas.
6. A composition according to any one of claims 1 to 5, wherein the gel contains a thickening agent.
7. A composition according to claim 6, wherein the thickening agent is polyacrylic acid.
8. A composition according to any one of claims 1 to 7, wherein the composition has a density of greater than 1.1 g/cm<sup>3</sup>, more preferably greater than 1.2 g / cm<sup>3</sup> and most preferably greater than 1.4 g / cm<sup>3</sup>.

**BEST AVAILABLE COPY**

9. A composition according to any one of claims 1 to 8, wherein the non-aqueous portion of the composition has a salt content of at least 80% and more preferably at least 90%.
10. A composition according to claim 9, wherein the salt is a phosphate, sulphate, carboxylate or hydroxycarboxylate.
11. A composition according to claim 10, wherein the salt is a citrate salt.
12. A composition according to any one of claims 1 to 11, comprising from 0.05 to 5% enzyme.
13. A composition according to any one of claims 1 to 12, wherein the composition comprises a plurality of enzymes.
14. A composition according to any one of claims 2 to 13, wherein the particles contain an enzyme such that the ratio of gel enzyme to particle enzyme is between 5:1 and 20:1.
15. A composition in accordance with any one of claims 1 to 13, wherein the enzyme is a protease and/or an amylase.
16. A composition in accordance with any one of claims 1 to 15, wherein an enzyme stabilising aid is present in the gel in an amount of from 0.05 to 20% (expressed as a percentage based upon the whole composition).
17. A composition in accordance with claim 16, wherein the stabilising aid is a water-miscible organic solvent.
18. A composition in accordance with claim 17, wherein the water-miscible organic solvent is propylene glycol.

## BEST AVAILABLE COPY

23

19. A composition in accordance with claim 18, wherein the stabilising aid is a soluble calcium salt.
20. A composition in accordance with any one or claims 1 to 19, wherein the particles comprise a stabilising aid in an amount of from 40 to 70% of the weight of the particles.
21. A composition in accordance with claim 20, wherein the stabilising aid is a sugar and/or a starch.
22. A composition in accordance with any one of claims 2 to 21, wherein the gel and the particles have a difference in density of no greater than  $0.9 \text{ g / cm}^3$ , more preferably no greater than  $0.6 \text{ g / cm}^3$  and most preferably no greater than  $0.3 \text{ g / cm}^3$ .
23. A composition in accordance with claim 22, wherein the particles contain a density aid.
24. A composition in accordance with any one of claims 2 to 23, wherein the particles contain a dye / a pigment
25. A composition in accordance with any one of claims 1 to 24, wherein more than 80% of the particles have a particle size from 50 to 1,000 micrometres, more preferably from 200 to 800 micrometres and most preferably from 400 to 700 micrometres.
26. A composition in accordance with any one of claims 1 to 25 for use in dishwashing and/or laundry applications.
27. A method of dishwashing and / or laundry comprising the use of a detergent composition in accordance with any one of claims 1 to 26.